

water input ~~flow~~ rate of from about 50 gal./min. to about 500 gal./min. for a metals concentration of from about 50 mg./L to about 1,000 mg./L;

(d) then adding a flocculating agent polymer selected from a group consisting of cationic and anionic polymers to the water and allowing floccules including said metal compounds to form; and

(e) then separating said floccules including said metal compounds from the water.

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8. The method of claim ~~7~~¹ wherein there is added the further step (f) of further dewatering the floccules separated in step (e).

Sub. B2
9. The method of claim 8 wherein additional flocculating agent polymer is added to at least a portion of the waste water containing the flocculated metal compound separated in step (e).

Sub. B3
10. The method of claim 9 wherein after the addition of the additional flocculating agent polymer, the flocculated metal compound is dewatered in step (f) in a belt of filter press.

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11. The method of claim ~~10~~⁴ wherein there is water which is removed in step (f) and said water removed in step (f) is removed to a polishing pond.

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12. The method of claim ~~8~~² wherein in step (e) separation is conducted by means of a clarifier.

Sub. B47
13. The method of claim 12 wherein additional flocculating agent is added to at least a portion of the flocculated metal compound separated in step (e).

Sub. B5
14. The method of claim 13 wherein after the addition of the additional flocculating agent polymer, the flocculated metal compound is dewatered in step (f) in a belt filter press.

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15. The method of claim ~~14~~⁸ wherein there is water removed in step (f) and said water removed in step (f) is removed to a polishing means.

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16. The method of claim ~~8~~² wherein in step (e) separation is conducted by means of sequential treatment in a clarifier and a rotary drum thickener.

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17. The method of claim ~~16~~¹⁰ wherein additional flocculating agent polymer is added after the clarifier and then again after the rotary drum thickener.

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18. The method of claim ~~17~~¹¹ wherein after the additional flocculating agent polymer, the flocculated metal compound is dewatered in step (f) in a belt filter press.

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19. The method of claim ~~18~~¹² wherein there is water removed in step (f) and said water removed in step (f) is removed to a polishing pond.

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20. The method of claim 17 wherein water removed in step (f) is removed to a settling pond.

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21. The method of claim 8 wherein in step (e) separation is conducted by means of a settling pond.

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22. The method of claim 21 wherein additional flocculating agent is added after the settling pond.

23. The method of claim 22 wherein after the additional polymer is added the flocculated metal compound is dewatered in step (f) in a belt filter press.

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24. The method of claim 7 wherein in step (a) the pH is adjusted to from about 6 to about 9.

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25. The method of claim 7 wherein in step (a) the pH is adjusted by adding a neutralizing agent selected from sodium hydroxide, anhydrous ammonia, sulfuric acid and hydrochloric acid.

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26. The method of claim 7 wherein the polymer is a cationic polymer which is used for dewatering purposes.

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27. The method of claim 7 wherein the polymer is an anionic polymer which is used for primary clarification purposes.

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28. The method of claim 7 wherein the polymer is an anionic polymer which is used for settling purposes.

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29. The method of claim 7 wherein the polymer is added in a dilute concentration of from about 0.5% to about 1.5% by weight.

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30. The method of claim 7 wherein after step (e) a portion of the separated water is removed to a polishing pond.

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31. The method of claim 7 wherein in step (e) separation is conducted by means of a rotary drum thickener.

Respectfully submitted at Canton, Ohio this 31st day of Aug., 2000.

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